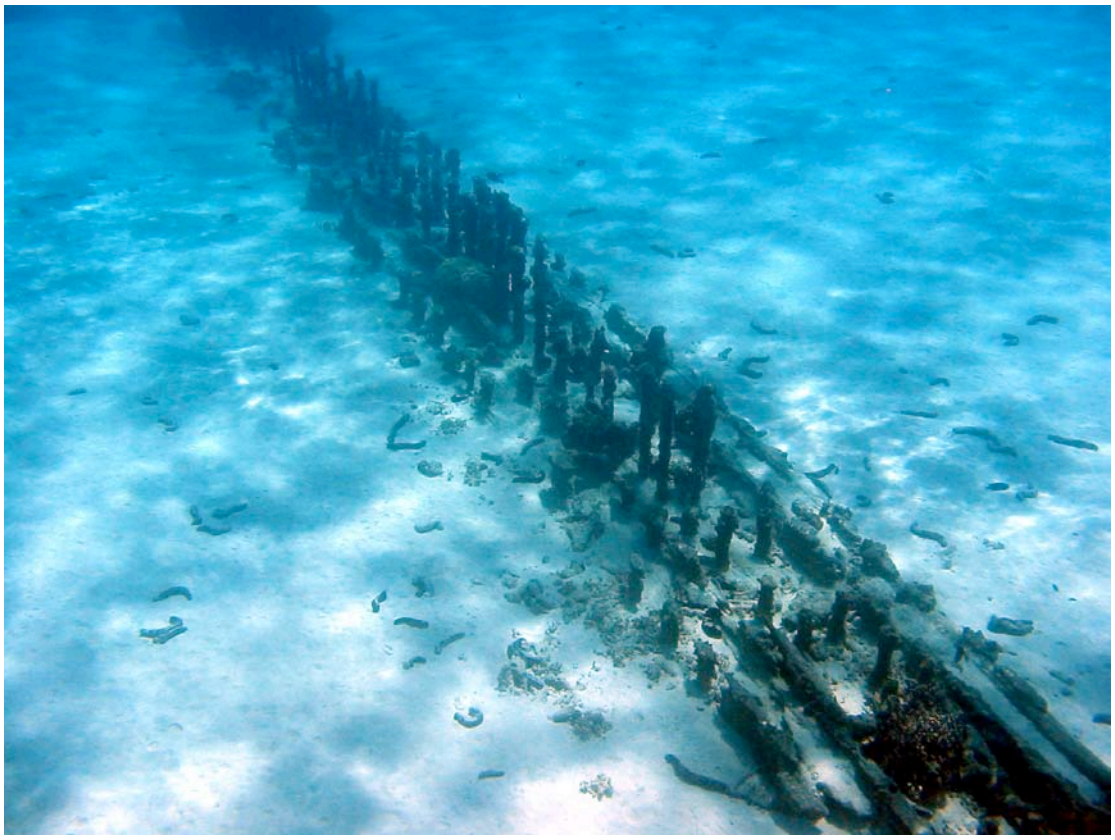
Direction Island Unidentified (Cocos Keeling Islands) Inspection Report



M. McCarthy

Report—Department of Maritime Archaeology
Western Australian Museum, No. 195.
2005

Technical Data

Site Name: *Direction Island unidentified.*
Date lost: Mid 19th Century?

Finders: Paul Fitzgerald & Bob Bower

Date of Inspection: 2/11/2004
Personnel:
M. McCarthy OIC: (Department of Maritime Archaeology, WA Maritime Museum)
G. Henderson (WA Maritime Museum)
W. Murray (Parks Australia)
R. Thorn (Parks Australia)
A. Granger (Parks Australia)

Approximate Location
c. 0.5 nm., south of Direction in Port Refuge at the north east corner of the lagoon at the Cocos (Keeling) Islands

GPS. 12°05. 924'S., 96°52.815'E (Datum Used...WGS 84...)

Chart No: BA 2510: South Keeling

File No: 239/81 **File Name**: Cocos Island Area

Sailing Directions:
Enter through the eastern passage to *Port Refuge,* which lies south of Horsburgh Island and north of Direction Island in the South Keeling lagoon, Cocos (Keeling) Islands. Steer south towards Home Island along the navigation markers until opposite the second port marker adjacent to Prison Island. Caution is required as shallow waters exist beyond Port Refuge.

Site Photographs:
Video: *Direction Island Wreck* (Parks Australia collection/ MADWAM Collection)

Site Conditions on inspection
Sea and Swell: Calm
Surge: Nil
Visibility: 20m plus
Current: Nil
Sea-bed coverage: The wreck lies on a clean sand bottom.

Chemical Measurements : To be assessed on a subsequent inspection**.** These data would include temperature, salinity, Ph, dissolved O_2, corrosion potentials.

Biological Data:
Colonising fauna: While there is some colonisation of the exposed fastenings by coral, it is not uniformly evident. This may be a product of a mobile sand bottom.

Site Condition and Integrity:
Being in the lee of the eastern fringing reef, the site is protected from the prevailing South-East Trade Winds), though it would be affected by heavy seas and swell from across the lagoon during the occasional cyclone. The wreck has clearly reached a point of stasis in respect of the natural environment. The exposed lines of iron fastenings (of which there are many) are all lightly coated in concretions.

Management considerations:
Natural Forces: What remains of the wreck, bar the fastenings, lie buried in a compact white sand in a warm-water coralline environment. The site can be subject to the effects of wave action and swell in winds blowing from the west and south-west, though it is completely protected during the prevailing South-East Trades. Cyclonic conditions are expected to have an effect and in those rare circumstances sediments might move, alternately revealing and burying parts of the site.

Present and future Human forces: Apart from an accidental mooring chain or anchor dropped in or crossing the site, there is little danger that this wreck would be damaged by human hand. The sand in which it lies is difficult to penetrate by hand, rendering the remains doubly protected.

Projected General site Stability in view of the above: What remains of this wreck is very strong and stable.

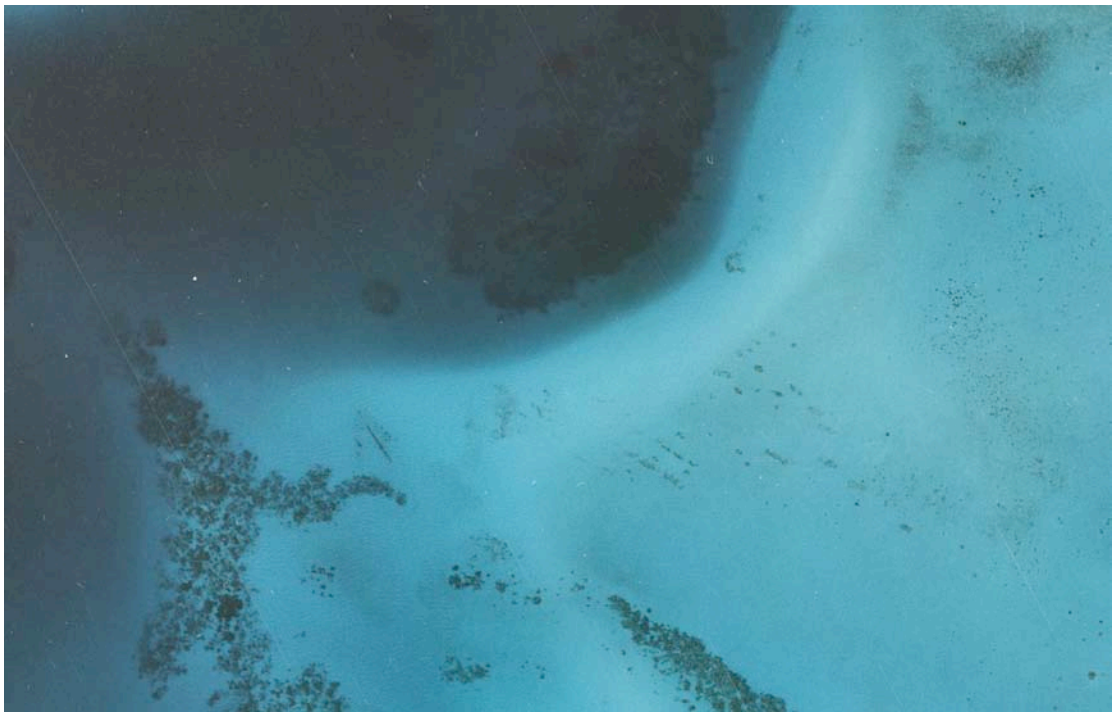
Navigation. The shipping passage between Home Island and Direction Island runs almost directly above the wreck site and while it creates no threat to the wreck, visitors need take care.

Description of Site

This wreck is visible from the surface on a clear day, appearing as a distinct NW/SE line on the sandy bottom just south of Direction Island. Underwater it appears as six rows of concreted iron keel/keelson bolts in 3.8m of water running across hard compacted sand. The bolts, projecting upright through the sand are all of iron and are in lines of three pairs each, all running for 40 metres. One is a central pair rising c.30cm above the sand and others either side of it each rising c.10cm from the sand. Some are colonised by coral,
Appearing at first glance as the remains of an old jetty or similar structure, they are on closer investigation those of a keelson, once supported by sister-keelsons either side. Hand fanning to reveal buried structure adjacent the keelson(s) was difficult due to the hard and compacted nature of the sediment. Nonetheless, there are indications of some floor timbers and a wide, but thin (c. 2 inches thick), planking, alongside the keelson. Being of scantlings too small for ceiling or outer planking in vessels of this size, this timber is possibly a limber strake—a removable plank fitted next to the keelson to clear debris collecting in the bilge. Two timber samples were taken, one of this strake and the other of what appears to be a frame, albeit with considerable difficulty. Across the sand, there were surface indications of more timber under the sediments, though this was not adequately tested, given the difficulties of test excavation without water dredge or airlift equipment. No other clues were visible above the sea floor, though disturbances in the natural contours of the seabed a few

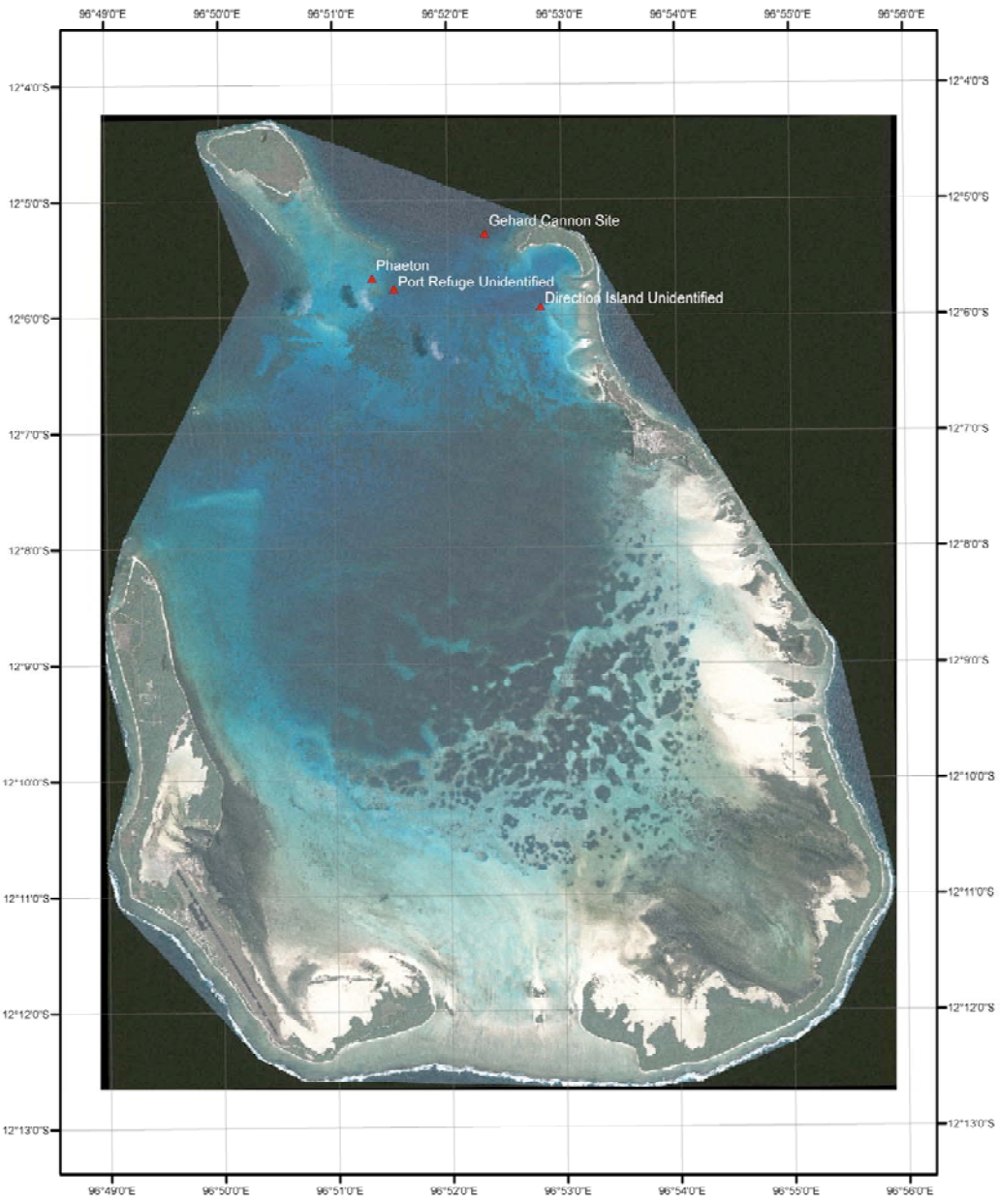
metres away from the line of the keelson, certainly provide some hint of further buried materials. These are expected to be the remains of frames. The aerial view below also provides indications of further remains.

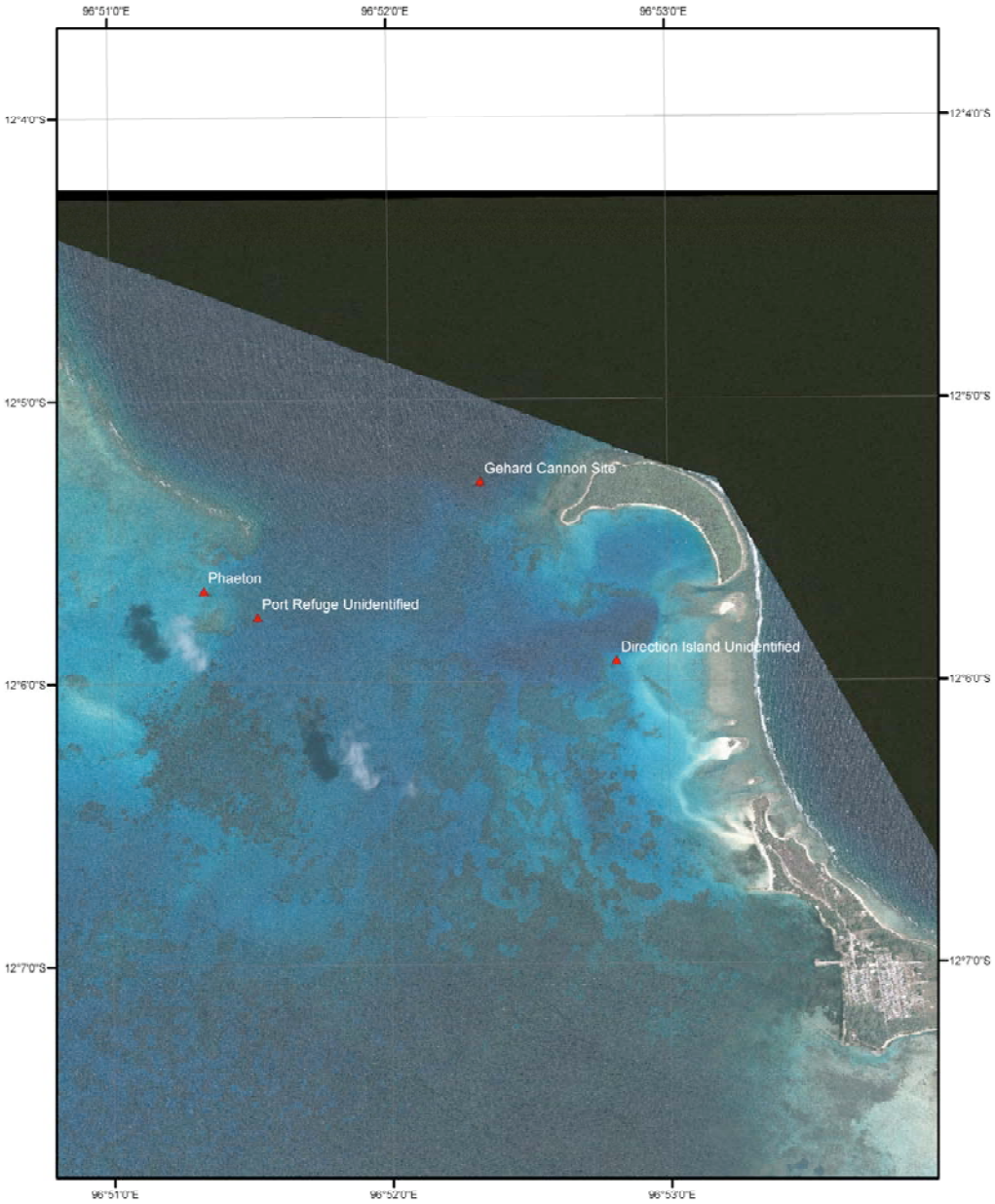
A satellite image of the wreck site (1987). Courtesy Parks Australia



Note: The line of the keelson is clearly visible as a distinct dark line on the seabed. The cause of the inverted 'V' shape at the top of the line is unknown at present. (See recommendations)

Satellite image showing access to site:



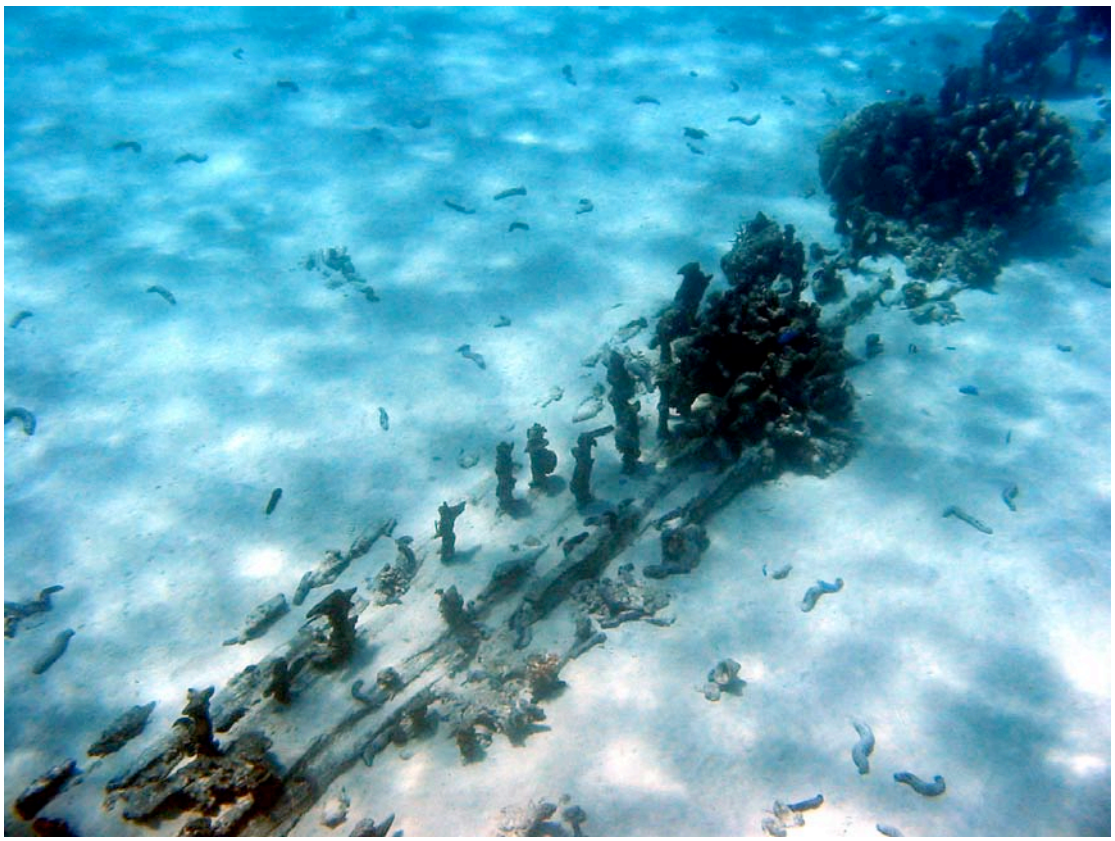

96°51'0"E
96°52'0"E
96°53'0"E
12°4'0"S
12°5'0"S
12°6'0"S
12°7'0"S
Gehard Cannon Site
Phaeton
Port Refuge Unidentified
Direction Island Unidentified

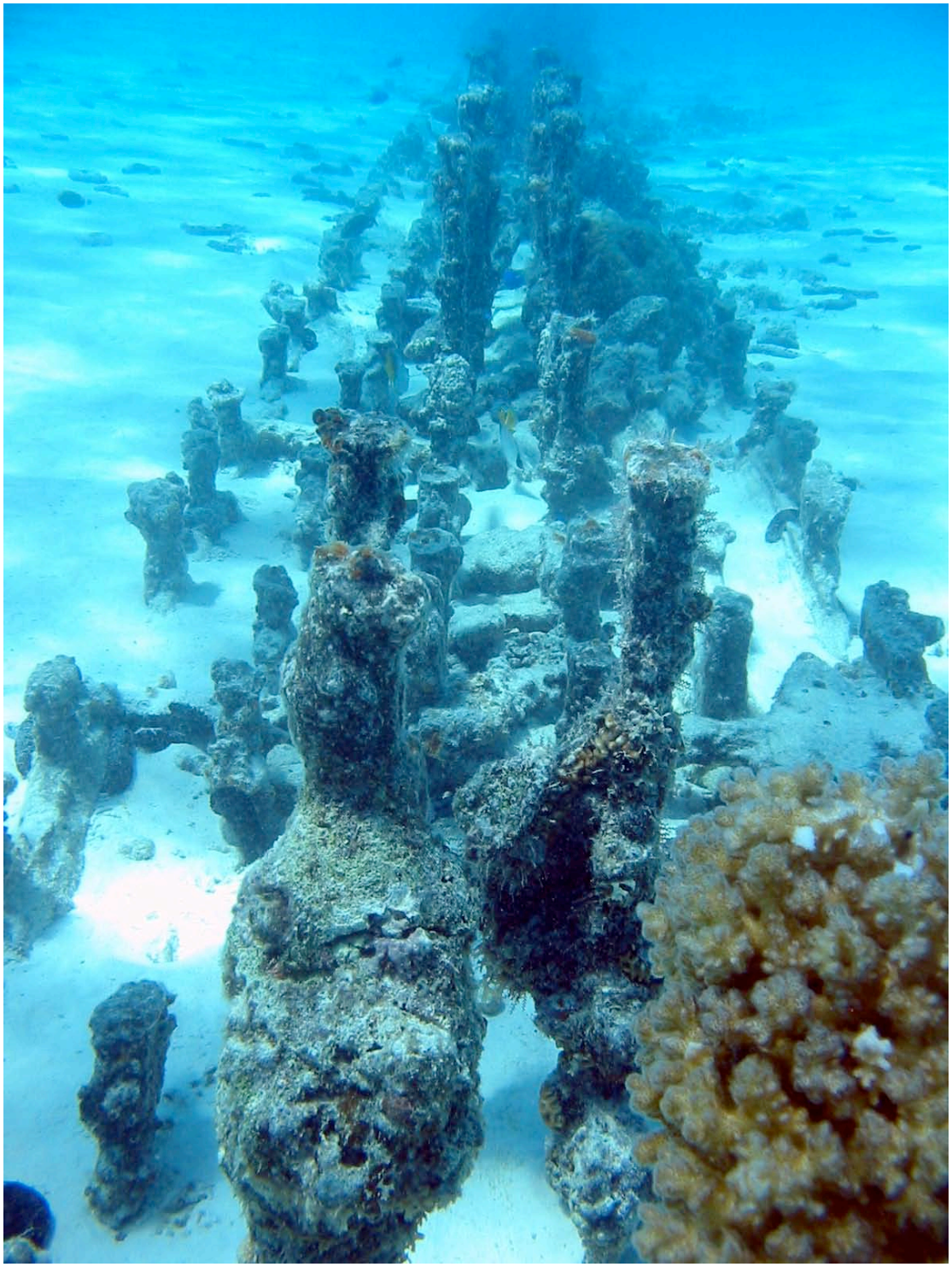
Sketch of Site: **(From the Wreck Inspection Daybook)**

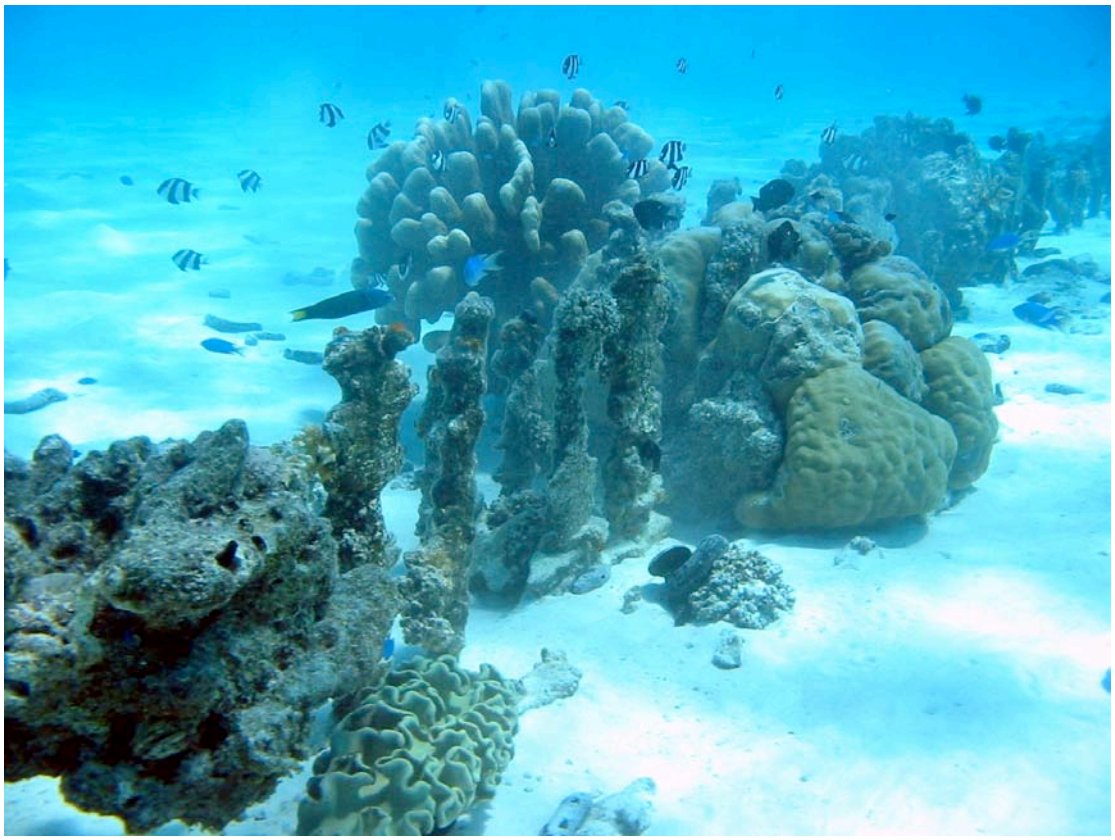
With an explanatory drawing showing a keel/keelson/sister keelson structure alongside

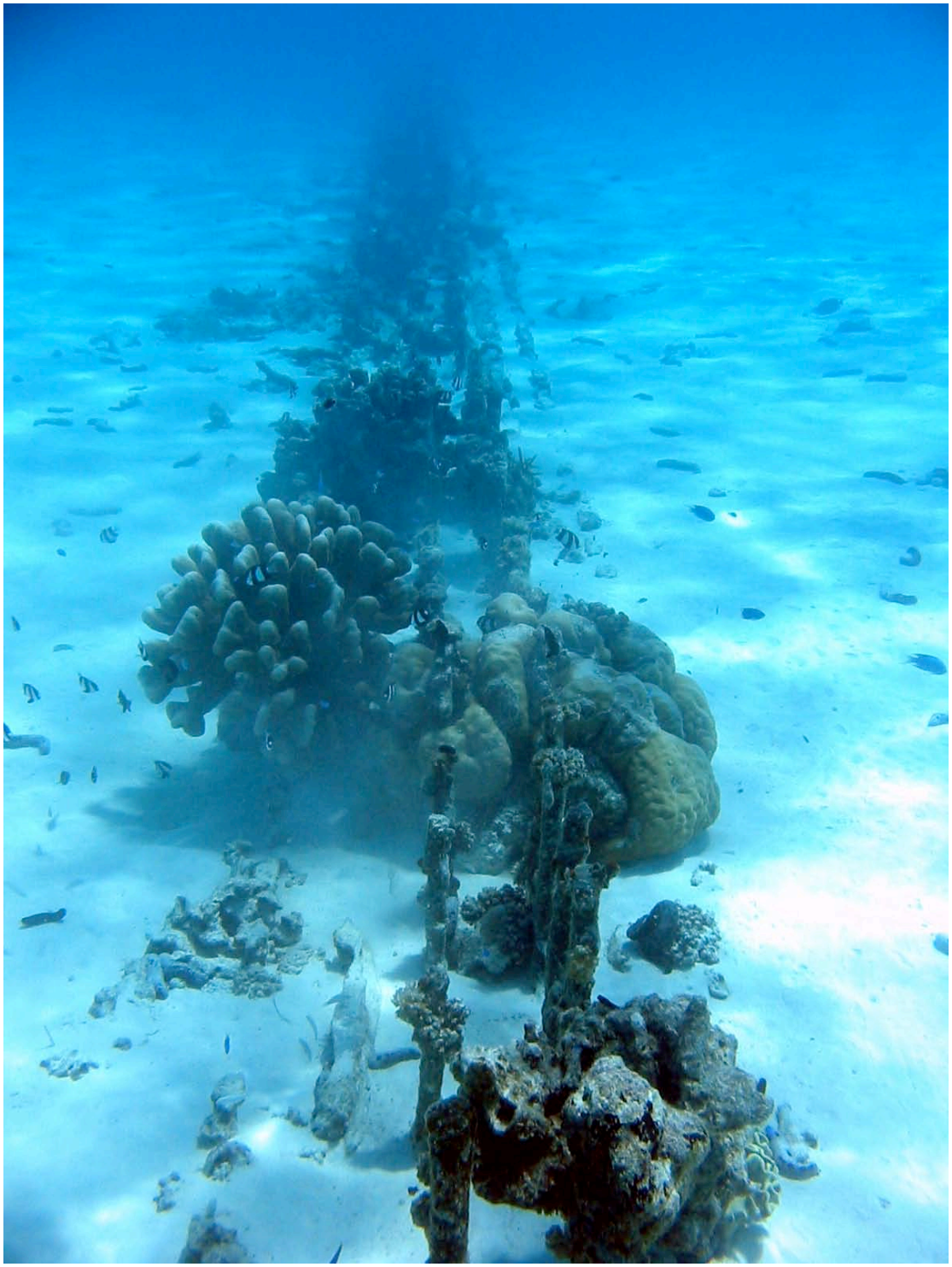
Not to scale

Views of the Site (R.Thorn)









Material Raised

Timber samples
#1) DI (1
#2) DI (2

Site Identification Comments

The diameter of the fastenings was not recorded given their concreted state. This left only the keel/keelson arrangement, the timber analyses and the keel length as clues to the vessel's size, provenance and identity.
The length of the run of bolts (40 m) and the depth (3.8 m) in which the wreck lies is consistent with a vessel of *c*. 40m (*c*. 130 ft) between perpendiculars, i.e. not including bow and stern rake and drawing slightly more than the depth of the site (c. 12–14 ft).
The timber samples were sent for analysis at the conservation laboratories of the Western Australian Maritime Museum and were found in one case to be a sample of white oak (*Quercus* species), having either a European or North American provenance. The other sample is a softwood and is likely be pine of the Southern Yellow Pine group. Pines of this group are native to many regions including Central America, North America and the Caribbean. Thus, on the basis of the tentative softwood identification, the Direction Island wreck appears to have a North American origin. (Godfrey, 2004). (See Appendix 1).
Logically, it could be also be considered that the vessel was driven ashore to its present location from a position somewhere in Port Refuge which lies to the north west. This is on the axis of the site.
Many large vessels called into the Cocos (Keeling) Islands en route to other locations, some in need of repairs, others in transit, some seeking or offloading cargo, (Bunce, 1988). Many visits appear not to have been recorded and the presence of one ship purporting to be the *Luigi Raffo* (1892) that appears to have been stolen and given a false name, before its crew were deported, attests to the difficulty that will forever be experienced in satisfactorily identifying any unknown wreck in the islands. The Cocos Island *Luigi Raffo*, for example could have come from anywhere.
Of immediate interest nonetheless, are two American vessels that are known to have been wrecked in the lagoon. One the *Robert Portner,* an American schooner was wrecked 'in the atoll' by 'mishandling by her crew' in 1878 (Gibson-Hill, 1948:155). The other was the *Gudden Barstow,* a New Bedford ship wrecked in 1839, 'probably on Direction Island' (Gesner, 1983, pers. comm.)
A listing for *Robert Portner* appears in Merchant Vessels, US, for the year 1877. Official Number 110299, sloop rigged, 631.51 gross tons and home-ported in New York. Given that another American schooner *J.M. Coleman,* launched in 1888, was smaller at 472 gross tons, and 448 net, yet it was 157 ft. (48m) long, then it is reasonable to conclude that this c. 130 foot long (c. 40m) wreck is not *Robert Portner*. It is also evident that the *Horsburgh Island unidentified wreck* at 46m long, a site that was part of this series of inspections, is a better fit for *Robert Portner*.
In research conducted for a proposed 1983/4 inspection tour of the Islands that was also to include two members of the present inspection team, (Graeme Henderson and this author), our colleague Peter Gesner, (now a maritime archaeologist with the

Queensland Museum), located a reference to the wreck of the *Gudden Barstow*. This appeared in a series of articles by C.A. Gibson-Hill on the archives of the Clunies-Ross family. These pertain to the establishment of the colony on the islands. Gesner's research not only carries the note that *Gudden Barstow* was wrecked in 1839 'probably on Direction Island' but it carries the annotation, 'New Bedford boat; crew and cargo saved'. (Gesner, pers. comm., 19/06/1983). In another source referred to as the 'Dutch equivalent of the *Nautical Magazine'* that Gesner located in Amsterdam, appear background articles written by, or about, Dutch captains who called in to the Cocos for repairs in 1829, 1842 and 1856.

In one article, there appeared reference to a Captain J.J. Duijntjer of the *Dankbaarheid* which put in for repairs in April 1842. There Duijntjer mentions, but does not name, seven wrecks that occurred in the period 1828-1842. In another section he reports as follows:

> While I was there, there was a lot of wood available, taken from wrecks; for instance, the entire skeleton of a 3 masted American ship, all of its timbers had been stored away in special shelters and store-houses by the industrious Mr Ross; stored and neatly stacked, frame by frame, each numbered and marked. Also the bowsprit and masts and spars from a British brig were stored with special care.

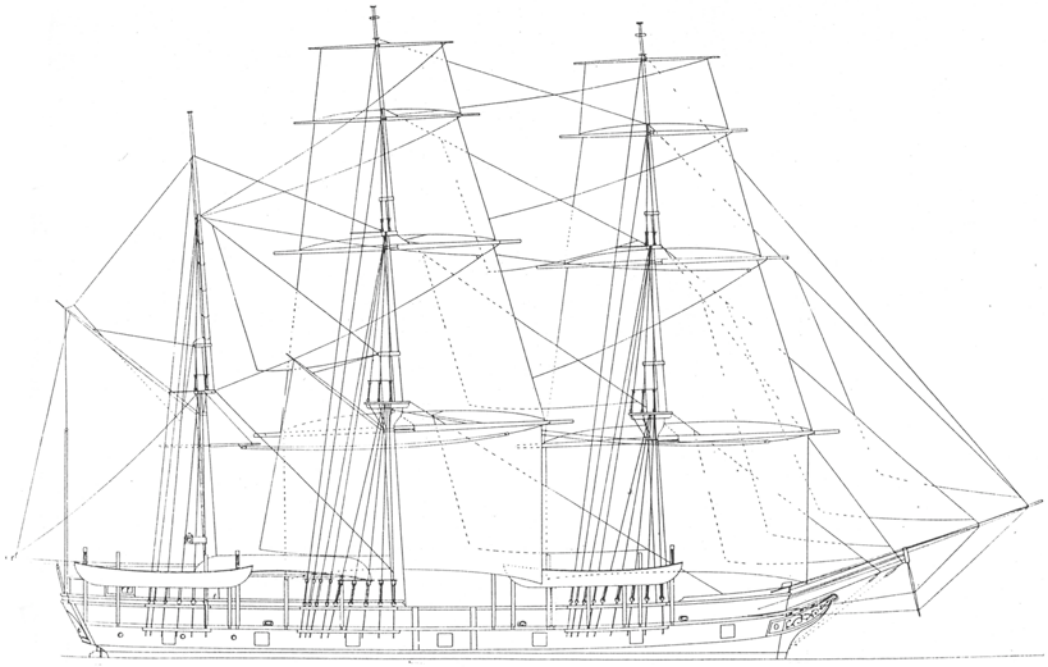
In reproducing a list that Clunies-Ross had provided him, Duijntjer also names eight ships, British, American and Dutch that called in for repairs (apparently) in the period 1828-1842. These two examples, the number of wrecks, and the number of ships calling in for repairs, provide some indication, firstly of the number of wrecks expected to lie on the islands and secondly, of the extent of the ship repair/ship breaking/ship building industry there.

As *Gudden Barstow* was a New Bedford ship that was wrecked in 1839 'probably on Direction Island', it becomes a prime candidate for the 3-masted American ship referred to by Captain Duijntjer. New Bedford was noted for its three-masted whalers and one, the object of a detailed study involving this author, is the three-masted ship *Thomas Nye* launched in 1850, built near Boston of oak, pitch pine and fir. Renamed *Day Dawn* and eventually lost whilst in the Australian timber trade, *Thomas Nye*, was 36.9m long, 8.5 metres beam, 4.35m deep and of 355 tons (McCarthy, 1980). The following illustration entitled a 'Typical New Bedford Whaler' is from an illustration produced by the American shipbuilder Charles Desmond (1919). As the American whaler type did not change markedly in this period examples provide some indicators of the characteristics expected of *Gudden Barstow*.

Adding further to the possible New Bedford connection in the case of the Direction Island Unidentified, a small bronze gun 2.46m long, with a three and a half inch bore—possibly a 4 pounder—is found set on a concrete base outside the Shire Offices on nearby Home Island. On the right hand trunnion is inscribed CA & Co Boston and on the left appears the date 1837. In respect of the ships from which such a gun might emanate, *Gudden Barstow*, from New Bedford, a vessel that was lost in 1839, is

clearly a prime candidate. It is especially so given that vessels in this period and in these waters tended to carry (up to three) small guns for signalling and defence. [1]

A Typical New Bedford Whaler **(From Desmond, 1919)**



Wreck Site History

(i) Contemporary Salvage:

The lack of visible timbers other than the keelson(s), the total absence of fittings and fixtures, the depth of water, the normally-benign conditions, the extremely easy accessibility of the site and the presence of a large labour force with which to effect salvage at nearby Home Island from the mid 19th Century on, all attest to the indisputable fact that this site was heavily salvaged soon after it was wrecked. That the Clunies-Ross family and their labour-force were adept at shipbuilding and ship-breaking and that they prized shipwreck materials, as a result—even storing them for the purposes of a ship-building and repair facility they had established by the mid 19th century—adds further to this.

Captain J.J. Duijntjer's account of a wrecked American whaler being totally dismantled and the timbers numbered in readiness for use on the next shipbuilding or repair job fits these circumstances well. One could expect that even in the normally calm and shallow water in which this wreck lies, the keel/keelson unit would have proved too strong to break-up, nonetheless. A similar example exists in the case of the *Alex T. Brown,* a large American schooner lost in 1917 on the beach just north of

[1] This conclusion is based on the archaeological and survey record of ships plying the Indian Ocean to finish up wrecked on the Western Australian coast.

Fremantle. Only its keel/keelson/sister keelson arrangement and the stubs of the frames remain today.

(ii) When found in modern times and by whom.
The wreck was found by then island residents, Paul Fitzgerald & Bob Bower and reported to the Department of Maritime Archaeology, WA Maritime Museum on 13 February 2002.

(iii) Modern Salvage.
While this wreck would always have been known given its appearance as a dark line on a sand bottom near a heavily-frequented channel, indications are that after it was heavily salvaged in the 19th century and after the passing of a number of cyclones, the fact that it was indeed a wreck was possibly lost to living memory. Long term Cocos Malay residents would have sailed over the wreck many times, and certainly would have known of it, but without access to diving gear would not necessarily have given the site much attention. The same applies for service personnel operating nearby in WWII. Allied to this is the relative youth of sport diving, for it is only with the aid of a mask, or similar, that modern folk would have recognised the remains as a keelson. The case is put then that the remains were generally dismissed, until reported to the museum in recent times, as insignificant.

(iv) Casual Diver interference, if any.
In respect of the sport diving community, this site has long since been considered to be an old jetty, or similar, and to date there has been no incentive for divers to visit it.

(v) Modern diver use, if any.

Dive shop operators and recreational divers generally will have found little reason to visit the site other than as a curiosity while transiting to and from the harbour at Direction Island.

Assessment of Site Significance

(i) Archaeological: The remains are those of a 19th century wooden-hulled sailing vessel of American origin. They have not been disturbed in recent times and what remains of the hull lies under a hard, fine sediment. Few artefacts are expected to remain. The wreck is easily accessible, and it lies in shallow and normally very benign waters. As such, and notwithstanding the paucity of the remains, this wreck represents a very useful opportunity to study a site of this nature

(ii) Technological
Apart from wooden shipbuilding practice, there appears little of technological import evident in the visible remains.

(iii) Scientific
The wreck provides a useful opportunity to monitor the site formation processes at work in a warm water corraline environment and also to examine the rate of colonisation of artificial structures by coral.

(iv) Educational
Given its normally benign, easily accessible and very shallow environment, this wreck provides a very useful tool for the Island schools and for visiting groups seeking to access an historic wreck, for academic purposes. This site would provide an ideal 'field school' for maritime archaeologists in training or seeking experience should test excavation in order to ascertain the extent of the remains be considered.

(v) Recreational/Tourist
The benign, easily accessible and very shallow environment combine with the normally excellent visibility to render this site of some potential for charter operators as a second dive, following decompression or deep dives, for snorkellers and for visitors travelling in the glass-bottomed boat facility.

(vi) Cultural
This wreck has tangible links to the period when the islands were both a haven and a hazard for ocean-going sailing ships. It has links to the period when a boat-building, wrecking and ship repair facility existed under the supervision of the Clunies-Ross family. Ancestors of the present Cocos (Keeling) people living on Home Island are certain to have been involved in the salvage of this vessel.
This site can also provide a link to the iron guns on exhibition at the Museum and to the brass gun at the Shire offices. It is also believed that there may be a link to a cannon dump on the edge of the channel south-west of Direction Island. See report in this series.

Recommendations & Management Proposals

1. Being well-over 75 years old, lying in Commonwealth waters, having significance under the terms of the criteria listed above, being virtually untouched in recent times, the wreck should be protected under the terms of the *Commonwealth Historic Shipwrecks Act*.

2. As an integral part of the cultural heritage by all stakeholders, the site could be marked with interpretive materials below and above water (on land) advising visitors of the significance of the site and of its importance to the people of the islands and to the tourist industry on which they have come to increasingly rely.

3. A wreck map and information pamphlets on this and on other maritime sites in the region should be produced.

4. A test excavation in order to ascertain the full extent of the remains could be performed. The cause of the 'V' shape apparent in the satellite image above needs also be ascertained. Further analyses (timber type and dimensions, fastening sizes and composition &c) would also be conducted in order to assist in better identifying the site.

References

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Appendix

Report Wood Identification Cocos Island 2004

Dr Mack McCarthy supplied six wood samples for identification with a view to determining their provenance. These samples, obtained during a trip to Cocos Island in 2004, were given the simple codes #1-6 and are described below. The transverse surface of each sample was polished to a 1200-grit finish prior to low power microscopic examination. Where necessary the radial longitudinal surfaces were cut with a scalpel to reveal features on these surfaces under high power microscopic examination.

#1- #3 & #5 – Peg (Horsburgh Island Unidentified) Wreck:

#4 Direction Island Wreck:

Two samples were supplied under this number, differentiated solely on the basis of the sizes of the respective samples.
The **larger piece** was degraded and mushy in most areas with teredo holes also present. Examination of a more solid area of the wood allowed clear identification of the following features:

Transverse surface:
- Rays are wider than pores and of 2 distinct widths
- Ring porous arrangement
- Tyloses are present

This wood is clearly a sample of white oak (*Quercus* species), having either a European or North American provenance.

The smaller piece was very solid and heavily iron impregnated.
Transverse surface:
The sample is a softwood with the following features:

- Resin canals are numerous
- There is a sharp transition between the less dense early wood and the denser latewood

Radial longitudinal surface:
The presence of substantial inclusions in the wood structure made it very difficult to identify this particular piece of wood. The ray parenchyma in particular, were highly impregnated, obliterating structural features needed for an unambiguous identification. Despite the problems associated with microscopic identification, the following features were observed:

- Ray tracheids are dentate
- Three (3) small pits were observed in 2 small cross-field regions.

The transverse and tentative radial longitudinal features indicate that the wood is likely to be pine of the Southern Yellow Pine group. Pines of this group are native to many regions including Central America, North America and the Caribbean.

Thus, on the basis of the tentative softwood identification, the Direction Island wreck may have a North American origin.

Dr Ian Godfrey
Head of Department of Materials Conservation
30 December 2004

Acknowledgements
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